This draft discussion note prepared by Institute of Public Health Bengaluru for brainstorming/discussion

Strengthening Government Specialist and Super-Specialty Care in Bengaluru and Karnataka

Bengaluru, the capital of Karnataka, is among India's fastest-growing metropolitan cities and a major destination for migrants from within the state and across the country. The city's economic growth has been accompanied by rapid urbanisation, expanding peri-urban settlements, and increasing inflows of workers and families seeking employment, education, and health care. This growth has created substantial pressure on Bengaluru's public health infrastructure, particularly on specialist and super-specialty hospitals that provide advanced care for cardiovascular, neurological, oncological, trauma, paediatric, and other complex conditions.

Karnataka is already home to several nationally reputed public tertiary institutes, such as the **Sri Jayadeva Institute of Cardiovascular Sciences and Research**, the **National Institute of Mental Health and Neurosciences (NIMHANS)**, the **Kidwai Memorial Institute of Oncology**, and the **Indira Gandhi Institute of Child Health**, which cater not only to Bengaluru residents but also to patients from across Karnataka and neighbouring states. However, the rising population load, coupled with increasing life expectancy and the growing burden of non-communicable diseases (NCDs), has made it essential to revisit the adequacy, distribution, and performance of specialist and super-specialty services within the city and for the state at large.

BOX 1: An ideal masterplan (could be for 5-10 years) for planning and developing tertiary care services

- **Assess adequacy and distribution:** Identify where specialist and super-specialty facilities are concentrated and where significant service gaps persist, both across Bengaluru's zones and in district-level referral networks.
- **Inform equitable investment:** Guide future infrastructure and human-resource investments to reduce spatial inequities and ensure that advanced care is accessible to populations beyond the city's core.
- **Support financial protection goals:** While the private sector has expanded rapidly, costs remain prohibitive for low-income families. Despite Ayushman Bharat – Arogya Karnataka (AB-ArK) and other government insurance schemes, government hospitals remain the mainstay for the poor and vulnerable, and hence deserve priority attention.
- **Understand referral pressures:** Quantify the patient inflows to Bengaluru from other districts and states, to inform both urban capacity planning and strengthening of district-level tertiary facilities.

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1.0 Key Disease Burden Highlights for Karnataka (2016)

As per the ICMR's disease burden profile for Karnataka based on data from 1990-2016, Karnataka faces a dual burden comprising:

- Communicable, maternal, neonatal, and nutritional diseases: 25.1% of total DALYs
- Non-communicable diseases (NCDs): 62.0% of total DALYs[1]]\Injuries: 12.9% of total DALYs

Leading causes of disease burden (DALYs as % of total) include diarrheal diseases (11.7%), preterm birth complications (7.9%), lower respiratory infections (6.6%), ischemic heart disease (4.8%), tuberculosis (3.8%), chronic obstructive pulmonary disease (COPD) (3.6%), and diabetes (1.1%).

Risk factors shifted from malnutrition, unsafe water/sanitation (WaSH) toward metabolic risks such as high blood pressure (10.5%), dietary risks (9.6%), and high fasting plasma glucose (8.3%) between 1990 and 2016.

Life expectancy has improved (females 62.5 to 71.1 years; males 59.0 to 67.1 years).

The top causes of premature mortality include ischemic heart disease, COPD, stroke, tuberculosis, diarrheal diseases, and preterm birth complications.

1.1 Key Differences in Karnataka vs Other States

Karnataka shows a relatively advanced epidemiological transition with higher burden of NCDs compared to many poorer northern states still battling infectious diseases. However, communicable diseases like TB and diarrheal diseases remain significant compared to very high-income states.Rapid urbanization and air pollution contribute to respiratory disease burden. The state exhibits a complex dual challenge requiring balanced specialty capacity in both infectious disease control and chronic disease management.

The private and trust sector (Apollo, Fortis, Narayana, Manipal, Aster, BGS, SPARSH, St John's, etc.) complements this ecosystem, offering high-end services such as transplants,

[1] T*he Disability-Adjusted Life Year (DALY) is a standard public-health metric that combines both premature mortality and years lived with disability into a single measure of overall disease burden. One DALY represents the loss of one year of healthy life. Lower DALY values indicate better population health. DALYs help decision-makers compare the relative impact of different diseases and prioritize investments where the greatest health gains can be achieved per rupee spent.*

robotic surgery, and oncology. However, high treatment costs at private hospitals limit access for uninsured and lower-income groups.

Mapping of services shows that **cardiac, neuro, renal, and oncology** care are widely available, while **hepatobiliary, endocrine, and advanced psychiatric services** remain relatively limited within the state system. Bengaluru has near-complete coverage of major super-specialities, but regional cities lag behind.

The **burden of non-communicable diseases (NCDs)** in Karnataka continues to rise. Recent estimates show:

- **Diabetes:** ~8–11 % statewide; ~10–13 % in urban Bengaluru
- **Hypertension:** ~20–25 % adults statewide and citywide
- **Cardio-vascular disease risk:** high clustering of metabolic factors
- **Chronic Kidney Disease/End-stage renal disease:** increasing tertiary referrals and dialysis demand
- **Cancer:** significant load at Kidwai and private oncology hubs

1.2 Rapid assessment based on evidence-base on disease burden estimates & unmet needs

In the lack of a master-plan, we could start with examining the specialties covered by existing government-owned (incl autonomous) specialist and super-specialty institutions.

Catalogue existing specialist and super-specialty institutions in Bengaluru Urban district, detailing specialty focus (cardiac, oncology, neuro, trauma, paediatrics, endocrine, ophthalmology, etc.), bed strength, ICU capacity, emergency services, teaching status, and empanelment under government insurance schemes. (see Table 1)

Analyse the spatial distribution of these institutions, identifying geographic clusters and underserved zones. (**See figs 1 & 2 at end of document)**

A) A rapid analysis of spatial distribution of main tertiary and super-speciality care hospitals in Bengaluru using publicly available data on the internet:
a) Victoria Hospital (Bangalore Medical College & Research Institute): central, near K.R. Market / Cubbon Park area (central wards).
b) **Bowring & Lady Curzon Hospital**: close to Cubbon Park / central area (historic public hospital cluster).
c) **Jayadeva Institute of Cardiovascular Sciences & Research**: Jayanagar / south-central (major cardiac tertiary centre). Jayadeva is among the largest public cardiac institutes.
d) **Kidwai Memorial Institute of Oncology (KMIO)**: central / near Vishveshwaraiah (north-east of central cluster); currently expanding (news: expanding to 1,200 beds due to demand).
e) **NIMHANS (National Institute of Mental Health & Neurosciences)**:

south-central / near Koramangala / Hosur Road area (neuro-speciality).
f) **BMCRI (Bangalore Medical College & Research Institute) / associated hospitals** (tertiary services in central/near central areas).
g) **Other specialty / referral public centres**: Rajiv Gandhi Institute of Chest Diseases (T.B./chest), K.C. General (various), district-run hospitals, spread across the city but major tertiary capacity clustered in the central / south-central belts.

Key take-away: Majority of these hospitals are located in the south and central part of the city.

Similar rapid analysis of available tertiary and super speciality care hospitals in Karnataka state suggestions that tertiary and super speciality care hospitals are heavily concentrated in Bengaluru, Mysuru, Hubli–Dharwad and Belagavi. Large parts of the state, especially many northern, north-eastern districts (Kalaburagi/Gulbarga, Raichur, Yadgir, Bidar, Koppal, Ballari), eastern districts (Ballari / Vijayanagara / Raichur / Kolar / Chikkaballapur) and some southern tribal/peripheral districts (Chamarajanagar, Kodagu, parts of Mysore periphery) have little or no local tertiary/super-speciality capacity and therefore need targeted expansion of the following services: oncology, cardiology with PCI capability, nephrology/dialysis, high-dependency neonatal care, trauma/emergency surgery, and stroke/neurology services.

1.3 Key observations

1. The bed strength of government super-specialty hospitals ranges from ~200 (specialised block) to ~1,150+ beds (Jayadeva).
2. While bed availability per 1000 population looks good for the Bengaluru city, many of these beds are in private hospitals which are not affordable for low socioeconomic populations.
3. Dedicated referral institutes exist for major disease burdens: cardiovascular (Jayadeva), cancer (Kidwai), paediatrics (IGICH), trauma/ortho (SGITO), neurosurgery/plastic/gastro (BMCRI block), indicating a structured public tertiary layer.
4. KIDWAI, NIMHANS and Jayadeva all face pressures in terms of rising need for beds, often due to poor availability/quality of care in other generic tertiary care hospitals (Victoria, Bowring, other General hospitals - Jayanagar etc)
5. Many institutes are autonomous but under Government of Karnataka, which ensures funding, staff, governance, scheme empanelment.
6. For many institutes, specific ICU/CCU bed numbers, nurse staffing, and scheme enrolment (cashless govt insurance) are not readily found. This is a data gap for policy analysis.
7. Geographically, many of these institutes are located in central and south Bengaluru (Jayanagar / K R Road area) , which has implications for spatial equity

(outer/suburban/city-periphery may have fewer large government super-specialty centres).

8. Because these are government setups, they are likely critical components for publicly funded schemes (e.g., state insurance, Ayushman Bharat) and for emergency referral infrastructure.
9. Hepato-biliary and endocrinology superspeciality service requirements are currently not adequately covered by existing super-speciality hospitals in Bengaluru as well as for the state.
10. The burden of chronic diseases in urban India is increasing. At the same time populations which are migrant, live in slums (notified or non-notified) are increasing which often depend on public hospitals.

2.0 How can specialist and super-specialty services in Bengaluru be strengthened?

1. **Develop a multi super-speciality hospital in Bengaluru**
   Developing another super-speciality hospital will increase super-speciality care bed availability. It will also decongest other super-speciality hospitals which are overburdened and reduce waiting periods at those hospitals. Since Bengaluru already has a few super speciality hospitals (such as Kidwai Hospital, Jayadeva Hospital) which act as centres of excellence, a multi super-speciality hospital can fill the gap and provide a single centre of multiple super-speciality services. Such a hospital will also increase equity of accessibility of super speciality care for populations which can not afford care in private hospitals even though beds in private hospitals are increasing. This hospital should be a multi super-speciality hospital because often many patients have multiple morbidities which require integrated and coordinated care. Multiple morbidities are prevalent in urban India [2] and are increasing, demanding many super speciality services availability under one roof. Some ideas include (but not limited to)

   1a. **Integrated Cardiology and Stroke Care Center**: to address top causes of premature mortality.
   1b. **Advanced Pulmonary and Infectious Disease Hospital Wing**: to blend TB care, COPD management, and critical respiratory support.
   1c. **Maternal-Neonatal Intensive Care Unit (NICU) with Pediatric Super-specialties**: focused on reducing neonatal mortality and complications.
   1d. **Endocrinology and Diabetes Care Unit:** given rising metabolic disease burden.

In any case, such a multi-super-specialty hospital must be carefully linked with existing government hospital networks for careful referral & back-referral, integrated bed management and have a very strong outreach function that ensure careful coordination with district health officers and primary health care infrastructure for tele-support, organising preventive care & promotion functions of health rather than only being limited to curative services.

[2] Prenissl J, De Neve JW, Sudharsanan N, Manne-Goehler J, Mohan V, Awasthi A, Prabhakaran D, Roy A, Tandon N, Davies JI, Atun R, Bärnighausen T, Jaacks LM, Vollmer S, Geldsetzer P. Patterns of multimorbidity in India: A nationally representative cross-sectional study of individuals aged 15 to 49 years. PLOS Glob Public Health. 2022 Aug 17;2(8):e0000587. doi: 10.1371/journal.pgph.0000587. PMID: 36962723; PMCID: PMC10021201.

2. **Strategic location**
   Given that all the public tertiary and super-speciality hospitals are in south and central Bengaluru, opening such hospitals in other areas of Bengaluru will increase access for populations living in those areas.

Table 1: List of superspeciality hospitals in the state compiled for rapid assessment from public sources (Caution: Data may be out-dated & will need to be verified)

Sl. No.	Name of the Superspeciality Hospital	Major Superspeciality Services Provided	City / District	Bed Strength	Key Challenges
1	Sri Jayadeva Institute of Cardiovascular Sciences and Research	Cardiology, Cardiothoracic Surgery, Cardiac Electrophysiology, Pediatric Cardiology	Bengaluru / Mysuru / Kalaburagi	Bengaluru: 1,150; Mysuru: 400; Kalaburagi: 371	High patient load, long waiting times
2	Kidwai Memorial Institute of Oncology	Oncology, Radiation Therapy, Surgical Oncology, Pediatric Oncology	Bengaluru	863	Overcrowding; limited radiotherapy capacity
3	NIMHANS (National Institute of Mental Health and Neurosciences)	Neurology, Neurosurgery, Psychiatry, Neurosciences Research	Bengaluru	1,096	Bed shortages; very high referral load
4	Bowring and Lady Curzon Hospital & Super-Speciality Block (PMSSY)	Cardiology, Nephrology, Neurology, Gastroenterology, Urology	Bengaluru	203 (PMSSY super-speciality block)	Infrastructure and staffing limitations
5	Victoria Hospital — Super-Speciality capacity (BMCRI campus)	Cardiology, Neurology, Nephrology, Urology, Oncology	Bengaluru	1,000	Equipment maintenance delays; overcrowding
6	BMCRI — PMSSY Super-Speciality Hospital	Cardiology, Neurosurgery, Nephrology,	Bengaluru	203 (PMSSY block)	High patient turnover

		Endocrinology, Urology			
7	KIMS (Karnataka Institute of Medical Sciences) — Hubballi (campus)	Cardiology, Neurology, Nephrology, Urology, Oncology	Hubballi	~1,600	Referral burden from North Karnataka
8	Vijayanagar Institute of Medical Sciences (VIMS) — Bellary	Cardiology, Neurology, Nephrology	Ballari	680 (campus reported)	Limited advanced diagnostic facilities in some units
9	Hassan Institute of Medical Sciences — Super-Speciality Block	Cardiology, Neurology, Nephrology	Hassan	≈200–350	Incomplete infrastructure in some units
10	Mandya Institute of Medical Sciences — Super-Speciality Hospital	Cardiology, Neurology, Nephrology	Mandya	≈300	Human resource shortages
11	Mysore Medical College — Super-Speciality Hospital	Cardiology, Neurology, Nephrology, Urology	Mysuru	≈220–500	Equipment and manpower gaps
12	Belagavi Institute of Medical Sciences — Super-Speciality Hospital	Cardiology, Neurology, Nephrology	Belagavi	≈220–400	Limited specialty staff
13	Shivamogga Institute of Medical Sciences — Super-Speciality Block	Cardiology, Neurology, Nephrology	Shivamogga	350	Infrastructure under development
14	Gadag Institute of Medical Sciences — Super-Speciality	Cardiology, Neurology, Nephrology	Gadag	300	Limited tertiary-level facilities
15	Bidar Institute of Medical Sciences — Super-Speciality	Cardiology, Neurology, Nephrology	Bidar	300	Low specialist availability
16	Raichur Institute of Medical Sciences — Super-Speciality Hospital	Cardiology, Neurology, Nephrology	Raichur	300	Staffing & funding constraints
17	Kalaburagi Super-Speciality Hospital / GIMS campus	Cardiology, Neurology, Nephrology	Kalaburagi	371 (Jayadeva campus opened 371	Referral overload; expansion ongoing

				beds)	
18	Narayana Institute of Cardiac Sciences (Narayana Health)	Cardiology, Cardiac Surgery, select tertiary services	Bengaluru (Bommasandra)	606 (official)	High service cost for uninsured patients
19	Narayana Multispeciality Hospital (regional)	Cardiology, Oncology, Neurology, Gastroenterology, Urology	Mysuru (regional campuses)	≈250–300	Urban-centric access
20	Apollo Hospitals — Bannerghatta Road	Cardiology, Oncology, Neurology, Gastroenterology, Nephrology, Orthopaedics, Transplants	Bengaluru	350	Cost barriers for lower-income patients
21	Fortis Hospital — Bannerghatta Road	Cardiac, Neurology, Oncology, Orthopaedics, Gastroenterology, Nephrology	Bengaluru	264	High treatment costs
22	Manipal Hospital — Old Airport Road	Cardiology, Oncology, Neurology, Nephrology, Gastroenterology, Transplants	Bengaluru	650	Referral overload
23	SPARSH Super-Speciality Hospitals (Yeshwanthpur / Sarjapur / Yelahanka)	Cardiac Sciences, Neurosciences, Gastroenterology, Orthopaedics, Renal Sciences, Women & Child Care	Bengaluru (multiple)	Yeshwanthpur: 275; Sarjapur/Yelahanka: 250 - verify branch confirmations	Limited insurance coverage for some procedures
24	Aster CMI Hospital — Hebbal	Cardiology, Neurology, Oncology, Gastroenterology,	Bengaluru	500	Expansion & commissioning challenges

		Nephrology, Pulmonology, Transplants			
25	Columbia Asia Referral Hospital — Bengaluru	Cardiology, Neurology, Oncology, Orthopaedics, Gastroenterology	Bengaluru	≈350	Limited government tie-ups
26	Sakra World Hospital — Bengaluru	Cardiology, Neurology, Orthopaedics, Oncology, Gastroenterology	Bengaluru	350	High treatment cost
27	BGS Gleneagles Global Hospital	Hepatology, Gastroenterology, Cardiology, Oncology, Transplants	Bengaluru	500	Expensive tertiary services
28	St. John's Medical College — Super-Speciality Block	Cardiology, Neurology, Nephrology, Urology	Bengaluru	400	High patient load; waiting times
29	JSS Hospital	Cardiology, Neurology, Nephrology, Oncology, Urology	Mysuru	1,800	Referral overload from rural areas
30	SDM Hospital (SDM Medical College & Hospital) — Dharwad	Cardiology, Neurology, Nephrology, Oncology, Orthopaedics	Dharwad	1,200	Specialist shortages in subunits
31	Yenepoya Medical College — Super-Speciality Hospital	Cardiology, Neurology, Oncology, Nephrology, Urology	Mangaluru	1,000	High patient volume
32	Father Muller Medical College Hospital	Cardiology, Oncology, Neurology, Nephrology, Urology	Mangaluru	1,250	Infrastructure expansion ongoing

33	KMC Hospital (Kasturba Medical College) — Manipal / Mangaluru	Cardiology, Oncology, Neurology, Nephrology, Gastroenterology	Manipal / Mangaluru	Manipal: 2,032 (network combined); Mangalore(Attavar): 600	Referral bottlenecks
34	A J Hospital & Research Centre	Cardiology, Neurology, Oncology, Nephrology, Gastroenterology	Mangaluru	425	Limited subsidised services
35	Tejasvini Hospital	Orthopaedics, Spine Surgery, Trauma, Neurosurgery	Mangaluru	300	Specialty-specifi c limitation
36	Vivekananda Memorial Hospital	Cardiology, Neurology, Limited Oncology, Diabetes Care	Sargur (Mysuru District)	100	Limited infrastructure for advanced care

Table 2: List of Superspecialty hospitals (public plus private) in Bengaluru **(Caution: Data may be out-dated & will need to be verified)**

Sl. No.	Superspeciality Services – Master List	Hospitals Providing the Superspeciality (Bengaluru)	Remarks
1	Interventional Cardiology / Cath lab (PCI)	Sri Jayadeva Institute of Cardiovascular Sciences; Narayana Institute of Cardiac Sciences (Narayana Health – Bommasandra); Apollo Hospitals (Bannerghatta Rd); Fortis (Bannerghatta Rd); Manipal Hospital (Old Airport Rd); Aster CMI; Sakra World Hospital; SPARSH (selected branches); St. John's Medical College Hospital; Columbia Asia (selected centres); BGS Gleneagles Global Hospital; HCG (selected centres)	Widely available across multiple tertiary centres.
2	Cardiac Surgery (Adult CTVS)	Jayadeva; Narayana (NICS); Apollo Bannerghatta; Fortis BG Road; Manipal Old Airport; Aster CMI; Sakra; BGS	Concentrated in large cardiac centres.

		Gleneagles	
3	Paediatric Cardiac Surgery	Narayana (Bommasandra); Jayadeva; Manipal; Apollo	Available at specialist cardiac centres.
4	Heart Transplant / Advanced Heart-failure therapies (VAD/LVAD)	Apollo Bannerghatta; Fortis BG Road; Manipal; Narayana (selected centres)	Limited to a few quaternary centres.
5	Electrophysiology & Implantable Devices	Jayadeva; Narayana; Apollo; Fortis; Manipal; Aster CMI	Widely available at cardiac centres.
6	Structural Cardiac Interventions (TAVR/TAVI)	Narayana; Apollo; Fortis; Manipal	Offered at quaternary cardiac centres.
7	Neurosurgery (complex cranial & spine)	NIMHANS; Manipal; Apollo; Fortis; Sakra; Narayana; St. John's; Aster CMI; BGS Gleneagles	NIMHANS is the national apex for many neuro subspecialities.
8	Neurointervention (endovascular stroke thrombectomy, coiling)	NIMHANS; Manipal; Apollo; Fortis; Sakra	Available at tertiary neuro centres.
9	Stroke Centres / Comprehensive Stroke Care	NIMHANS; Manipal; Apollo; Fortis; Narayana	Multiple centres provide acute stroke pathways.
10	Medical Oncology	Kidwai Memorial Institute of Oncology (Govt); HCG Cancer Centres (KR Rd and others); Apollo; Manipal; Fortis; Narayana; BGS Gleneagles; Sakra	Both government & private networks provide full medical oncology.
11	Surgical Oncology	Kidwai; Apollo; HCG; Manipal; Fortis; Narayana; St. John's; BGS Gleneagles	Available at major cancer/tertiary hospitals.
12	Radiation Oncology (IMRT/IGRT/SRS)	Kidwai; HCG; Apollo; Manipal; Fortis; Narayana	Advanced radiotherapy available; proton therapy not widely operational yet.
13	Paediatric Oncology & Haematology	Kidwai; Manipal; Apollo; St. John's; Narayana (selected)	Paediatric units exist in tertiary hospitals.
14	Bone Marrow / Stem Cell Transplant (BMT/HSCT)	Manipal; Apollo; Narayana (selected centres); Kidwai (hematology collaborations)	Available in select quaternary centres.
15	Kidney Transplant & Renal Sciences	Manipal; Apollo; Fortis; Institute of Nephro-Urology (Bengaluru); Narayana; St. John's	Widely available in city tertiary centres.
16	Liver Transplant / Hepatobiliary	Manipal; Apollo; Fortis (select centres); Narayana (select)	Concentrated at a few high-volume centres.

	Surgery		
17	Heart / Multiorgan Transplant (heart transplant)	Apollo; Fortis; Manipal (select centres)	Rare; limited to quaternary centres.
18	Lung / Heart-lung / Multiorgan Transplant	Very limited — performed only in very select quaternary centres (case-by-case)	Rare; not broadly available.
19	Nephrology, Dialysis & ICU Nephrology	Institute of Nephro-Urology; Manipal; Apollo; Fortis; Narayana; St. John's	Robust dialysis services across the city.
20	Urology & Robotic / Endourology	Manipal; Apollo; Fortis; Narayana; Aster CMI; Sakra; St. John's	Robotic urology available at several hospitals.
21	Gastroenterology & Advanced Endoscopy (ERCP, EUS)	Apollo; Manipal; Fortis; Narayana; Aster CMI; Sakra; St. John's	Widely available.
22	Hepatobiliary (HPB) Surgery	Manipal; Apollo; Narayana; Fortis	Concentrated in tertiary hepatobiliary centres.
23	Pulmonology & Thoracic Surgery (VATS)	Manipal; Apollo; Fortis; Narayana; St. John's	Available at tertiary centres.
24	Advanced Critical Care (ECMO, multi-organ support)	Apollo; Fortis; Manipal; Narayana; Aster CMI; Sakra	ECMO available in major tertiary hospitals.
25	Orthopaedics — Joint Replacement, Complex Spine, Limb Reconstruction	Manipal; Fortis; Apollo; SPARSH; Aster CMI; Sakra; Narayana	Widely available.
26	Spine Surgery (complex deformity / tumour)	Manipal; Apollo; Fortis; Sakra; Narayana	Widely available.
27	Plastic, Reconstructive & Microsurgery (incl. burns)	Manipal; Apollo; Fortis; SPARSH; Narayana; St. John's	Available at major tertiary hospitals.
28	Hand Surgery / Microvascular Reconstruction	Manipal; Apollo; Fortis; SPARSH; Narayana	Available in tertiary centres.
29	Maxillofacial & Craniofacial Surgery	Manipal; Apollo; Fortis; SPARSH; Narayana	Available at major hospitals.
30	Paediatric Surgery & Level-III NICU	Indira Gandhi Institute of Child Health; Manipal; Apollo; Narayana; St. John's	Dedicated paediatric tertiary centres exist.

31	Reproductive Medicine / Tertiary IVF & ART	Manipal; Apollo; Fortis; Narayana; multiple dedicated fertility centres	Widely available.
32	Endocrinology & Tertiary Endocrine Surgery	Manipal; Apollo; Fortis; Narayana; specialized endocrine clinics	Widely available.
33	Rheumatology & Biologics Clinics	Manipal; Apollo; Narayana; St. John's	Available in tertiary centres.
34	Vascular Surgery & Endovascular (aortic, limb salvage)	Fortis; Manipal; Apollo; Narayana; Sakra	Active endovascular programmes in tertiary hospitals.
35	Interventional Radiology & Image-guided Therapies	NIMHANS (neuro IR), Manipal, Apollo, Fortis, Narayana, Sakra	Widely available.
36	Pediatric Cranio-facial & Cleft Programmes	Manipal; Narayana; Apollo; St. John's	Available at paediatric/plastic surgery units.
37	Paediatric Sub-specialities (cardiac, neuro, oncology, NICU)	Indira Gandhi Institute of Child Health; NIMHANS (neuro); Jayadeva (pediatric cardiac referrals); Kidwai (paediatric oncology); Manipal; Apollo	Broad paediatric tertiary coverage.
38	Head & Neck / Oral-Maxillofacial Oncology	Kidwai; Apollo; Manipal; Fortis; St. John's	Offered at cancer & tertiary hospitals.
39	Stereotactic Radiosurgery / SRS (Gamma Knife / CyberKnife)	Kidwai (SRS services planned/expanded); Apollo; HCG; Manipal (select)	SRS available at select centres.
40	Proton Beam Therapy	Not broadly available currently in Bangalore (some proposals/plans at Kidwai & research centres)	Planned / not yet widely operational.
41	Bone Marrow Transplant / Haematopoietic Stem Cell Transplant (BMT/HSCT)	Manipal; Apollo; Narayana (selected); Kidwai (collabs)	Available at selected quaternary centres.
42	Pediatric Liver / Multivisceral Transplant	Very limited — performed only in very select quaternary centres (rare)	Rare in-city; available only in select centres/case basis.
43	Pediatric Interventional Cardiology	Jayadeva; Narayana; Manipal; Apollo	Available at specialised cardiac centres.

44	Diabetes Foot & Limb-salvage / Vascular-Endocrine Clinics	Manipal; Apollo; Fortis; Narayana; St. John's	Available.
45	Robotic Surgery Programmes (multispeciality)	Apollo; Manipal; Fortis; Narayana; Aster CMI; Sakra	Widely available in tertiary hospitals.
46	Bariatric & Metabolic Surgery (complex)	Manipal; Apollo; Fortis; Narayana	Available.
47	Complex Reconstructive Oncology (free flaps, microsurgery)	Kidwai; Apollo; Manipal; Fortis	Available in tertiary oncology centres.
48	Sleep Medicine (tertiary) & Home NIV Programs	NIMHANS (sleep disorders overlap), Apollo, Manipal, Fortis	Available.
49	Genetic & Molecular Diagnostics / Clinical Genetics	Manipal; Apollo; Narayana; specialized molecular labs in city	Available at major hospital labs.
50	Rare / Experimental Ultra-speciality Services (xenotransplantation, highly experimental therapies)	Not routinely available, limited to research / trial centres if at all	Mostly not available for routine clinical care.

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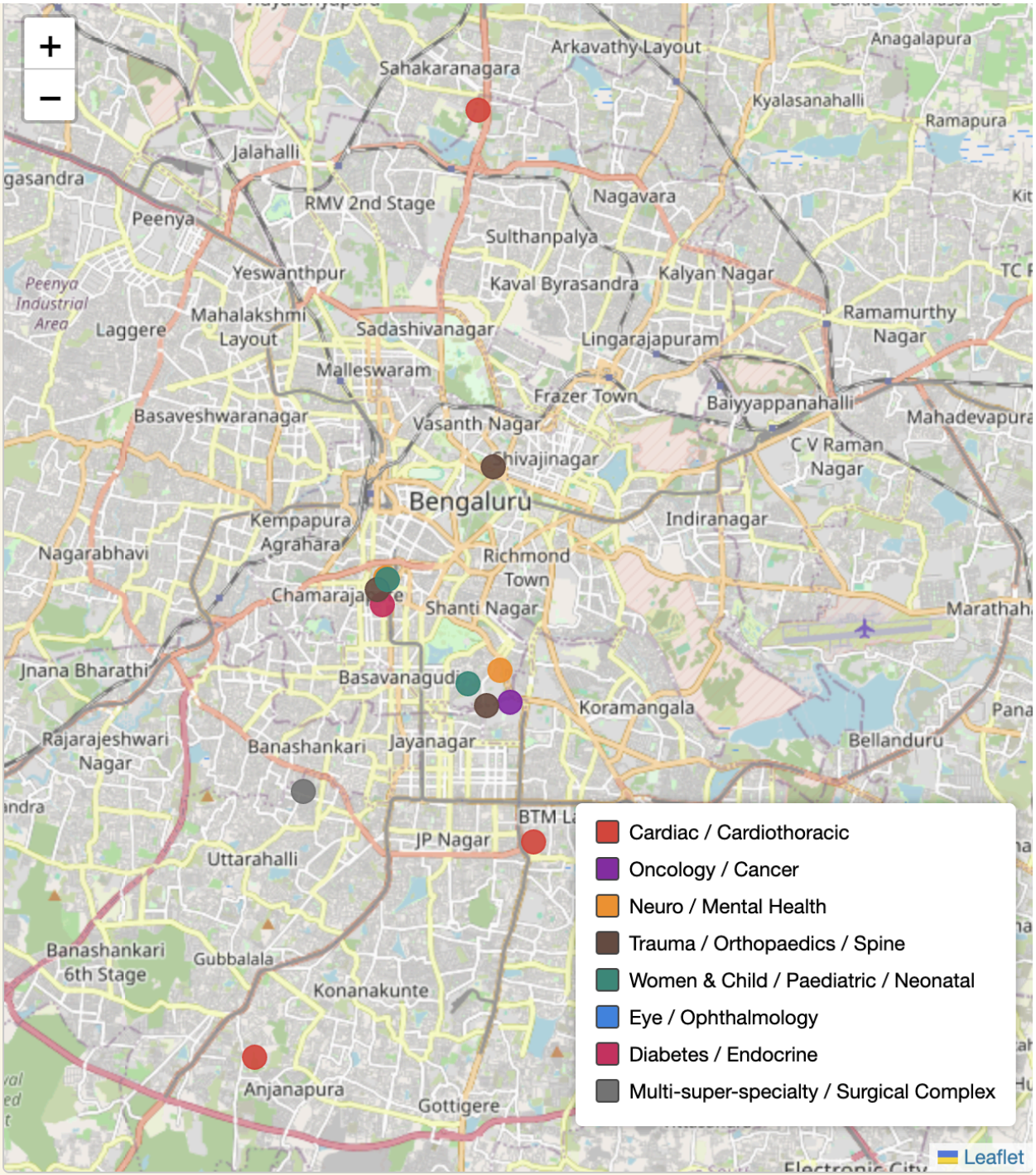

Fig 1: Mapping of government super-specialty hospitals in Bengaluru showing clustering in south & central Bengaluru & the list of super-specialties (Map created using public information sources by IPH Bengaluru)

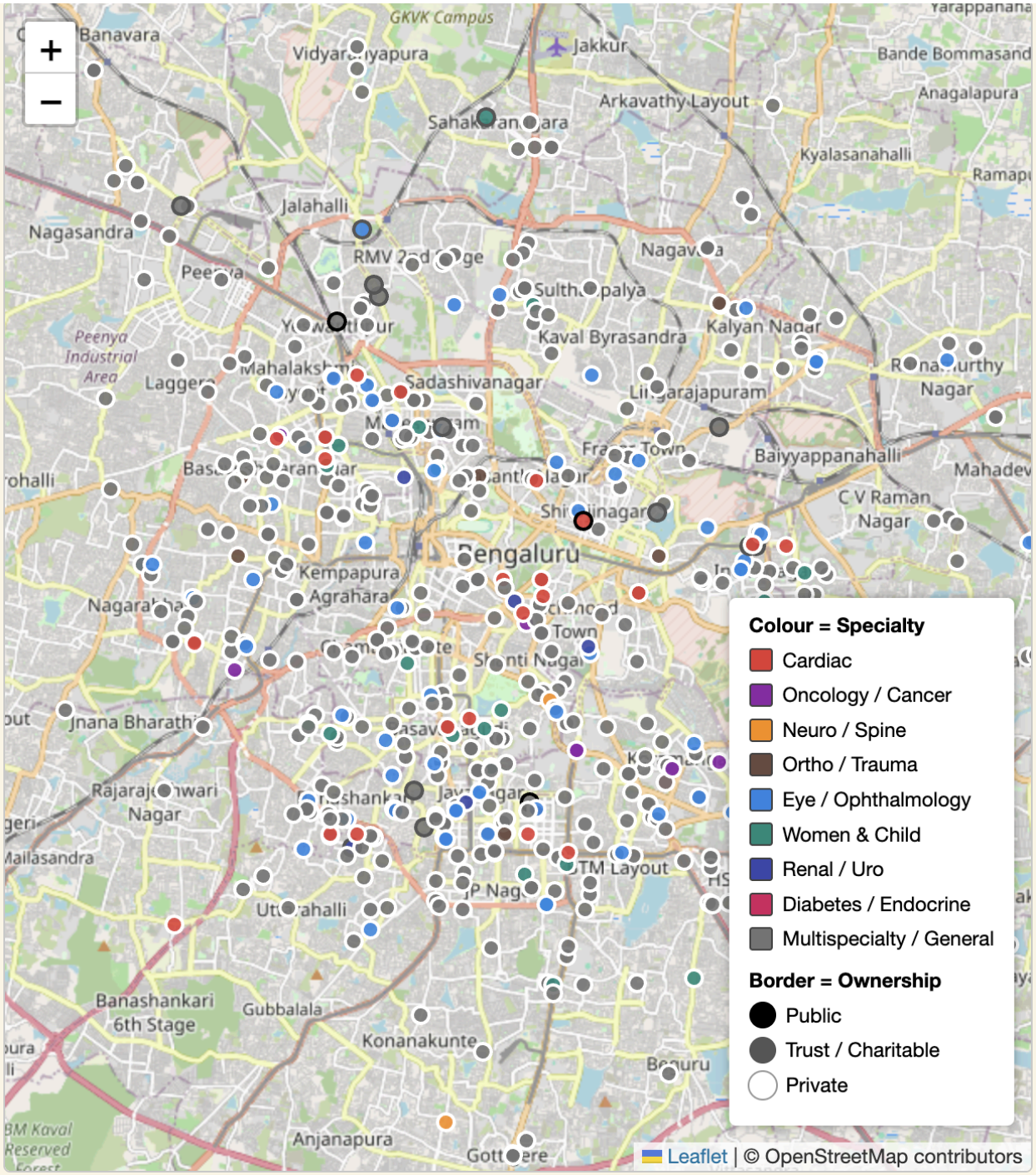

Figure 2: Mapping of specialty care services in Bangalore (public & private) using public data on data.gov.in by IPH Bengaluru team. NOte numerous private providers but with unknown/variable quality of care & financially inaccessible to urban poor/rural patients referred from across the state

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